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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,933

02/21/2007

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535 7590 01/31/2008

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EXAMINER

GAWORECKI, MARK R

ART UNIT

PAPER NUMBER

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MAIL DATE

DELIVERY MODE

01/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,933	Applicant(s) LACKAS ET AL.	
	Examiner MARK R. GAWORECKI	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/20/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 6, and 8-10 are objected to because of the following informalities:

Claims 6 and 8 contain the term “the multi-hole collimator”. There is no antecedent basis for this term in these claims or the claim from which they depend.

Claims 9 and 10 contain the term “the holes”. There is no antecedent basis for this term in these claims or the claim from which they depend.

3. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 6, 7, 9, 11, 12, 14, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Karellas (6,445,767).

With respect to claims 1, 12, and 14, Karellas shows a tomographic device comprising at least one collimator (112) and at least one detector for recording photons that pass through the collimator (column 2, lines 40-53), wherein

straight-line relative motion is provided between the detector and the object under investigation during the recording operation (steps 132 and 136, Fig. 12).

With respect to claim 3, Karellas does not explicitly describe the scanning system (of step 132, Fig. 12), although it would have been understood to have been automatic. Furthermore, it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

With respect to claim 6, Karellas shows a collimators that is closer to an object being investigated than the surface of the detector (Fig. 11).

With respect to claim 7, Karellas shows an exemplary sensor system comprising two stationary detectors that are orthogonally aligned to each other (Fig. 21C).

With respect to claim 9, Karellas shows a collimator with a keel-edge design (112, Fig. 11).

With respect to claims 11 and 16-18, Karellas teaches the use of a computer with software to reconstruct an image from the acquired data taken in each position (column 17, 24-51).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karellas.

With respect to claims 2 and 13, although Karellas does not explicitly disclose the accuracy of movement for the detectors during a scanning operation, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the scanning mechanism for small graduations of movement to correspond to the scanning of a very small object, especially when the system is designed for high spatial resolution (as described by Karellas, column 16, lines 42-55).

With respect to claim 15, Karellas, as applied above, suggests the use of a multi-hole collimator in emission imaging (column 16, lines 51-53) and teaches using a scanning procedure to procure several overlapping images (column 22, lines 31-39). With respect to the spacing of the holes in the multi-hole collimator, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karellas, in view of Anger (GB 1,184,304).

With respect to claim 8, Karellas, as applied above, suggests the use of a multi-hole collimator in emission imaging (column 16, lines 51-53), but does not specifically show holes with conical shapes. Anger shows a tomography system

using a cone-shaped "focusing" collimator that is well-known in the art (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a collimator with cone-shaped holes for imaging small areas with accuracy as applied by Anger (page 2, lines 34-46), depending on the size and resolution required for the subject being imaged.

9. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karellas in view of Albert (4,144,457).

With respect to claims 4 and 5, although Karellas does not show movement of the subject rather than the detector system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the subject to produce the same result as moving the detector, as this practice is conventional and well-known in the art. Albert is cited as an example of such a system (see Fig. 4).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karellas in view of Strauss *et al.* (4,419,585).

With respect to claim 10, Karellas, as applied above, suggests the use of a multi-hole collimator (column 16, lines 51-53), but does not explicitly describe the use of a collimator wherein the holes of the collimator are tilted. However, multi-hole collimators with tilted holes, including those that are variable and adjustable are known in the art and would have been obvious to one of ordinary skill in the art at the time the invention was made, depending on the type of

detector being used as well as the nature of the subject being investigated.

Strauss is cited as an example of such a collimator (abstract, Fig. 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK R. GAWORECKI whose telephone number is (571)272-8540. The examiner can normally be reached on Monday through Thursday, 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/David P. Porta/
Supervisory Patent Examiner, Art Unit 2884